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DESCRIPTION OF A NEW FORCEPS.

BY
HENRY D. FRY, M.D.,
OF WASHINGTON, D. C.

*Read in the Section of Obstetrics and Diseases of Women at the For-
tieth Annual Meeting of the American Medical Association,
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Reprinted from "The Journal of the American Medical
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presented by the author

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THE APPLICATION OF FORCEPS TO TRANSVERSE AND OBLIQUE POSI- TIONS OF THE HEAD. DESCRIP- TION OF A NEW FORCEPS.

The obstetric forceps is constantly undergoing modifications of construction, and there is no part of the original instrument that has not been, in some manner, altered to suit the ideas of the designer. Blade, shank, lock and handle have been changed in shape and size. Nevertheless, it may be said, but two distinct alterations of the original Chamberlen forceps have been made. They are the pelvic curve of the blade, and the application of axis traction.

Varied as are the designs, the method of employing the forceps is as little fixed as the instrument itself. The application of the blades to the sides of the pelvis, disregarding entirely the position of the head; the application of the blades to the sides of the head whenever practicable; intermittent manual traction; continuous mechanical traction; the advisability or non-advisability of compressing the foetal head; the utility or inutility of lever action, express some of the diverse opinions held on the subject. This lack of uniformity proves the non-existence of a scientific basis. Labor is absolutely a physical act, accomplished according to a well defined mechanism, therefore the laws governing the application of artificial aid should be precise and absolute. With the

earnest desire that progress may be made in this direction, I present my communication to the consideration of the members of the Obstetrical and Gynæcological Section of the American Medical Association.

The following propositions are advanced, and suggest for discussion both the methods of employing the forceps, and the modification of its construction.

1. *The forceps should always be applied to the sides of the child's head.*

2. *The obstetrician should not wed any single form or design of instrument, but he should be equally expert with several, and employ one or another according to the circumstances of the case, always selecting that instrument which best enables him to apply the blades to the sides of the head.*

First Proposition. *The forceps should always be applied to the sides of the child's head.* This is styled the French method, because it has been so generally advocated by the obstetric authors of France since the time of Baudelocqué. Poulet,¹ of Lyons, in a recent article on this subject states that the doctrine, French in its conception, has unfortunately remained exclusively French, in the sense that it has never been, even partially, adopted by the obstetricians of other nations. In spite of the theoretical efforts of the French masters, the practice has diminished gradually in importance and in frequency of application. In England, Austria and Germany the forceps are always applied symmetrically—one blade to the right, and the other to the left of the pelvis. Poulet further states that even in France the custom is so changed that now the majority of physicians and many specialists operate in like man-

¹ "Nouvelles Archives d'obstétrique et de Gynécologie," Paris, 1887, pp. 44-62.

ner. When the head is at the superior strait, he says no one counsels the oblique application of the instrument—an impossibility with the curve of Levret. Under these circumstances, all agree that the head must be seized in whatever manner possible. When, however, it is in the excavation, the classic French authors at least in theory advise oblique application.

In reply to a letter asking for information as to the method generally pursued by the Paris accoucheurs, Dr. Paul Bar kindly writes me:—“When we have to apply the forceps to transverse positions of the vertex, head in excavation or above superior strait, we seek, not to grasp the head from forehead to occiput, but we direct our efforts to apply one blade anteriorly and the other posteriorly.”

While it may be that in certain countries the forceps are usually applied to the sides of the mother's pelvis, Poulet undoubtedly errs when he states that the opposite method “has never been, even partially, adopted by the obstetricians” of those countries. Smellie, one of the earliest English workers in this field, paid strict attention to the situation of the child's ears in relation to the mother's pelvis, and invariably sought to apply the forceps to the sides of the head. Numerous operators, in England and on the Continent, follow the same practice.

In order to ascertain the opinion of the profession in this country, circular letters were addressed to all the teachers of obstetrics, and to numerous practitioners located in every State of the Union. Eighty-two replies were received and the views expressed may be summarized as follows: Forty-two always apply the blades to the sides of the head when possible. Thirty-one always apply the blades to the sides of the moth-

er's pelvis and disregard the position of the head. Nine recognize no rule and apply according to either method.

Various exceptions to these methods were presented.

A number who advocate the first method apply the forceps at the sides of the pelvis when the head is high (transverse or oblique), and after bringing down the presenting part, remove and reapply the instrument to the biparietal diameter of the head. Others, entertaining the same view, attempt to rectify the position of the head, when transverse, before applying the forceps. This is done by external manipulation, by the hand in the vagina, alone, or combined with external manipulation, and with the vectis or forceps.

On the other hand, some of those who follow the principle to adapt the forceps to the sides of the pelvis apply them, under some circumstances, in high situations, to the sides of the head. Several obstetricians employ, in these cases, special forceps with long straight blades.

The advantages of applying the blades to the sides of the head are well known and generally admitted. Reasons exist, however, to prevent the universal adoption of the custom. Its strongest advocates admit it is often impossible to grasp the head in such manner with the instruments now in use. The difficulty arises with high situation of the part when occupying an oblique position, and with transverse positions whether at the brim or in the cavity.

On the other hand some, and among the number many distinguished obstetricians, believe it unnecessary. They claim the application of the instrument to the sides of the pelvis permits the head to rotate within the blades and the normal mechanism of labor is not embarrassed. These

operators, we must bear in mind, exercise intelligent supervision, removing and reapplying the instrument when necessary and encouraging the progress of the head according to the natural laws of labor.

By many practitioners the forceps is used without any attempt being made to ascertain the position of the head. It is easy to apply the blades to the sides of the mother's pelvis and the head can usually be delivered in that manner. No attention is paid to the laws governing the passage of the passenger, and brute force supplies the scientific employment of artificial aid.

Transverse positions of the head offer special difficulties in the way of applying the blades to its sides. The most aimed at is to locate the instrument in one or other oblique diameter of the pelvis, seizing the head with a blade in front of one ear, and the opposite behind the other ear. The higher the head is situated the greater the difficulty, and when engaged at the brim few attempt to pass the blades in any manner except to the sides of the mother's pelvis. Such a grasp, besides being less secure, exerts injurious compression upon the foetal head. If the forceps be patterned after the Simpson model forward rotation of the occiput may take place within the blades, but if the instrument possess greater compressive power, rotation is hindered and the head is dragged into the pelvis transversely. If, under these circumstances, the forceps be not removed and rotation effected by nature, or artificially with the hand, or with the instrument reapplied to the sides of the head, one of the following results may be anticipated :

1. Continued and forcible extractive efforts may succeed in delivering the head, but it will be born with its occipito-frontal diameter in the transverse

of the pelvic outlet, causing, as a rule, laceration of the mother's soft parts, and injurious, if not fatal, compression of the foetal head.

2. Forcible efforts to deliver the head fail, and it becomes obligatory to attempt to push up the presenting part, and if the position cannot be rectified, to deliver by turning, or,

3. Failing to elevate the head, craniotomy is the only alternative.

An important consideration demanding notice, is the comparative frequency of transverse positions of the head. Many obstetric writers claim they are rare; and some of the gentlemen who replied to my circular letters expressed this opinion. My limited experience is opposed to such a view, but I should hesitate to give voice to the contrary were my position not fortified by good authority. During the past six months I have had occasion twice to apply the forceps to the head while transverse in the excavation. Lusk² states that when the head is said to occupy the oblique diameter it is not intended in a mathematical sense. It simply implies it is deflected from the transverse. How easily can one fail to recognize this deflection? Let us remember that the anatomical difference between an oblique and transverse position is limited to a space upon the side of the mother's pelvis scarcely more than one inch in extent. One who considers the position rare, is misled by his conviction. Finding the small fontanelle to the mother's right or left side, and the sagittal suture passing across the pelvis, he looks upon it as one of the oblique positions. A more painstaking examination might reveal to him the above suture passing directly parallel to the transverse diameter of the pelvis, and the fon-

² "Science and Art of Midwifery," New York: D. Appleton & Co., 1884, foot note p. 169.

tanelle situated at its extremity. A digital examination made while the woman occupies the left lateral posture contributes to an erroneous conclusion. Advantageous as this obstetric position may be for other purposes, it does not compare with the dorsal when our object is to ascertain the relative anatomical positions of the presenting parts of the foetus and the mother's pelvis. Abdominal palpation gives little aid in arriving at a differential diagnosis between transverse and oblique positions of the head.

In cases of pelvic deformity with contraction of the conjugate of the brim, it is a well established rule that the head occupies the transverse position. Doubtless, minor degrees of pelvic contraction, and disproportionately large foetal heads, exist as causal agents of these positions more often than suspected. The opposite conditions, a roomy pelvis or small head, also tend to produce, and to maintain in the excavation, transverse positions by failure to secure flexion.

In many unrecognized cases of transverse position, rotation relieves the difficulty and labor ends normally. In others, nature fails to correct the position and artificial aid is demanded, consequently the comparative frequency of transverse to oblique positions is greater in forceps cases than in those which terminate without such assistance. Failure to rotate will delay labor indefinitely. Binault³ extracted with forceps a foetus which was in an advanced state of putrefaction. The mother had been in labor fourteen days, and the head of the child occupied the left occipitiliac transverse. Four children had previously been born to her with easy labors, so that failure to rotate from a transverse position was the sole cause of delay in this case.

3 "Bull. Méd. du Nord," Lille, 1886, 8, vii-ix, 213-220.

Charpentier and Cazeau describe these positions fully, and give explicit directions for the application of the forceps. Cazeau,⁴ speaking of the comparative frequency of different occipital positions, says that in the results given, "no question seems to be made of the varieties we have designated as the transverse ones, and it is highly probable that they have been approximately added to one of the four preceding groups, *for these positions are not very unusual; indeed, I have often met with them myself at the clinique.*" Transverse positions, he adds, are more common than R. O. A., and left occipito-iliac transverse is more frequent than right. Mme. Lachapelle claims that transverse positions are more often met with than R. O. P. Charpentier⁵ writes: "One of the most frequent calls for interference is absence of rotation, the head being often transverse, but usually oblique, since these positions, as we have seen, are the fundamental, the others being simply varieties or consequences." Baudelocque, Moreau and Ramsbotham classify these positions. Although Playfair⁷ follows the majority of British obstetric authors, by describing only the four oblique positions of the head, he says: "Until fairly passed the brim, it more frequently lies in the transverse than has generally been supposed." Pouillet,⁸ in his article referred to, mentions the frequent occasions that arise at the Lyons clinique for using forceps in transverse positions. He recognized the absence of flexion in these cases and designed his angular forceps with parallel blades to rectify it. Spiegelberg⁹

⁴ "Theory and Practice of Obstetrics," seventh Amer. edit., P. Blakiston, Son & Co. ⁵Ibid. Phila., 1884, p. 314.

⁶ "Practical Treatise on Obstetrics," Wm. Wood & Co., New York, 1882, Vol. iv, p. 91.

⁷ "Science and Practice of Midwifery," third Amer. edit. H. C. Lea, Philadelphia, 1880, p. 262. ⁸Ibid.

⁹ "Text Book of Midwifery," Otto Spiegelberg, London, New Lyderham, Society Trans. 1887, Vol. 1, p. 210.

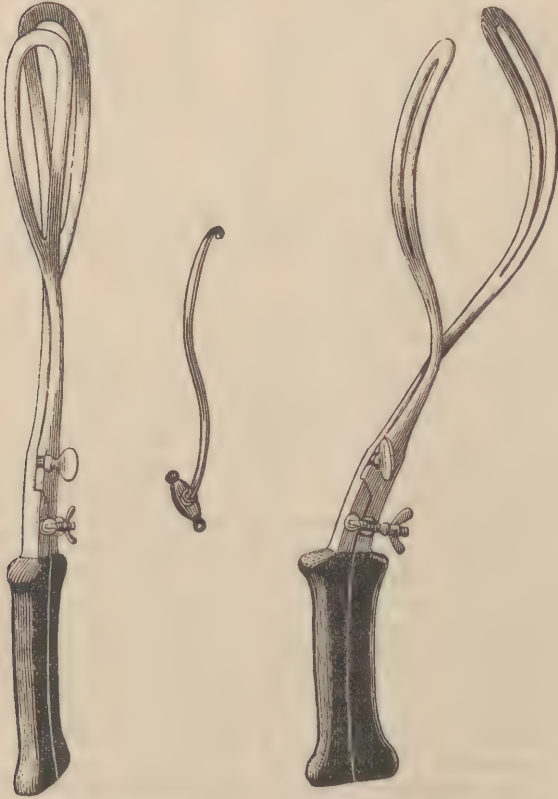
makes no distinction between transverse and oblique positions. The first vertex position is described as follows: "The back of the child looks to the mother's left, and the sagittal suture runs in the transverse or oblique diameter." His second vertex position is the reverse. He further says: "Occasionally the head passes transversely through the pelvic canal, and the sagittal suture is at the outlet in the transverse diameter.

"Deep transverse position of the head. The delayed rotation around the long foetal axis is due to an absence of resistance to the progress of the foetus. If the cause lies in the smallness of the head, or in the width of the whole pelvis being occasionally above the normal, the head may also emerge in the same diameter." Again he adds: "Since the accomplishment of rotation sometimes occupies a considerable length of time, the deep transverse position may cause a delay which is not without danger and may require artificial interference. Moreover the skull in the deep position is effected by a marked biparietal obliquity, the anterior parietal bone presents, its eminence appears beneath the pelvic arch, the great and small fontanelles lie far back, and are directed straight to the sides."

Without pursuing this line of investigation further I hope sufficient authority has been presented to support the statement advanced, that transverse positions of the head at the brim and in the excavation are not infrequent. When they persist, artificial aid is called for; moreover the application of forceps to the biparietal diameter when so situated is particularly difficult and more often impossible.

The difficulty is due to lack of a proper instrument. Forceps with the usual pelvic curve is valueless. Only when this instrument is applied one blade to each side of the mother's pelvis,

and the concave edge directed forwards, is it placed so that the pelvic curve conforms to the axis of the pelvic canal. With the forceps inserted in such manner, however, it is impossible



Antero-posterior Forceps.
(Front view.)

Antero-posterior Forceps.
(Side view.)

to grasp the head in the biparietal diameter when

situated either transversely or obliquely. In proportion as the instrument is turned to one side or the other for the purpose of grasping the sides of the head, the pelvic curve of the blades departs from the line of the pelvic axis and the tip of the anterior blade is projected backwards. Not only is the pelvic curve of the classic forceps of no value in these cases, but it complicates its introduction. It becomes necessary at one time to apply the male blade anteriorly, and at another the female. On this account some obstetricians employ, for high transverse positions of the head, long forceps with straight blades.

To overcome these disadvantages I have designed a forceps curved on the flat. The introduction is simplified because the same blade is always the anterior and the opposite the posterior. The pelvic curve being upon the flat surface, the head can be seized in its biparietal diameter, whether high or low, or whether placed obliquely or transversely. The curve adopted is the result of experimentation upon fresh foetal heads and articulated female pelves, and corresponds closely to the pelvic curve on the edge of the classic forceps. The instrument is furnished with a compressive screw for use with the axis-traction attachment, which consists of a steel rod having a handle at one extremity and a hook at the other. The hook fits closely into the fenestrum on the anterior blade and cannot injure the soft parts of the mother. The compressive power of the forceps is about equal to the Hodge, Wallace, and such instruments that are intended for application to the sides of the head.

By seizing the head in its biparietal diameter with the long axis of the blades, parallel to the occipito-mental diameter, we are better able to control flexion and rotation of the head and to

deliver by imitating the normal movements of labor. There is also less danger of injuring the child. Lusk¹⁰ states that forceps at the brim is dangerous to the child, "from the rarity of the occasions which permit the blades to be applied to the sides of the head, to which the cephalic curve is alone adapted." This danger is again referred to by Lusk when discussing the paper on "Injury of the Fœtus During Labor,"¹¹ read by Dr. Parvin before the Philadelphia County Medical Society. He points out the danger of destroying the respiratory sense by injury to the medulla when the head is compressed for some time with the blades applied from occiput to forehead. At the same meeting Dr. Goodell directed attention to the risk of destroying the child by pressing the cord between the blade of the forceps and the occipital bone. This accident he was sure had occurred at his hands, and he attributed it, as well as cases of facial paralysis he had repeatedly seen, to the blades of the forceps not being applied exactly to the sides of the head. Dr. Parrish has also reported¹² several cases of still birth evidently due to compression of the cord when coiled around the neck. "Only," he says, "when the instrument is applied to the sides of the head, with the long axis of the blades parallel to the occipito-mental diameter, is the cord safe."

Objection may be made, on theoretical grounds,

¹⁰ "Science and Art of Midwifery," Appleton & Co., New York, 1884; pp. 348.

¹¹ "New York Medical Journal," Vol. xlv, Nos. 22 and 23, pp. 606-634. In this article Dr. Parvin stated that contused wounds usually followed difficult delivery with forceps, and resulted if the blades were applied obliquely or antero-posteriorly to the head. In reply to my circular letters, one operator stated that he had destroyed the sight of an eye by oblique application of the blades to the head when high.

¹² "Journal of the American Medical Association," Vol. xii, No. 18, p. 641.

to the application of forceps with antero-posterior blades to the head when engaged transversely in the contracted brim, for the reason that the instrument encroaches upon the narrow diameter. On the contrary, this is an advantage, as the ability to compress the biparietal or bitemporal diameter of the head more than compensates for the space occupied by the blades. This view has happily been confirmed by Dr. Sloan, of Glasgow, in a recent communication¹³ to the British Medical Association. The antero-posterior forceps with which he experimented is a powerful compressor, the greatest distance between the blades when closed being $1\frac{1}{2}$ inches. The instrument was designed for application at the brim of flat pelvis, and "is never to be used until craniotomy is the only resource left." Trials were made with fresh foetal heads and dried pelvis, and the action of the forceps compared favorably with that of Simpson's.

Dr. Sloan had five opportunities to test the instrument in cases of obstructed labor, and the results were as follows:

Cases 1 and 2 were unsuccessful and had to be terminated by craniotomy.

Case 3.—Flat pelvis. Simpson's forceps failed; Sloan's antero-posterior forceps applied. Head brought down in fifteen minutes and delivered with straight forceps. Child made feeble efforts to breathe and died.

Case 4.—Flat pelvis, with true conjugate about $3\frac{1}{2}$ inches; Simpson's forceps failed; Sloan's applied and child readily delivered alive.

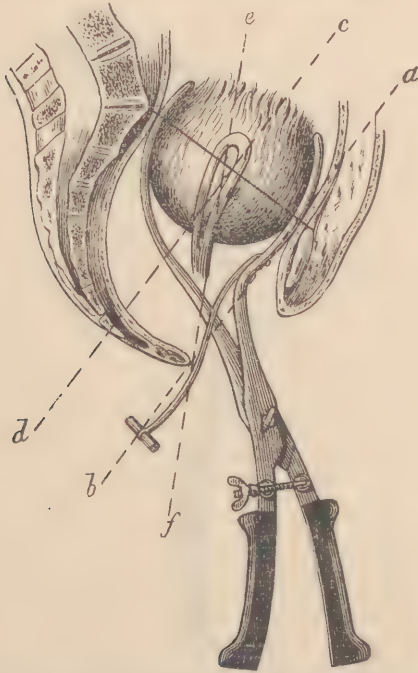
Case 5.—Flat pelvis, true conjugate $2\frac{3}{4}$ inches; child dead. Simpson's forceps failed; Sloan's completed labor promptly.

¹³ "Antero-Posterior Compression Forceps for Application at the Brim of Flat Pelvis." "British Medical Journal," Feb. 2, 1889, p. 229.

The instrument designed by Dr. Sloan is intended only to compress and bring the head through the contracted brim. To complete labor it is necessary to remove the anterior blade and apply another instrument, or deliver with the posterior blade, combined with supra-pubic pressure.

The use of the instrument which I offer is not restricted to labor in flat pelves, but to all cases in which, from failure to rotate, the head is situated transversely or obliquely. If necessary, it can be used to compress as well as to make traction or rotate, and delivery can be completed without changing to a different forceps. I have had but one occasion to test the instrument in obstructed labor, and it left nothing to be desired. The woman, a primipara, æt. 15 years, had been in labor thirty-three hours when I saw her. The waters had been evacuated twenty-eight hours, the os dilated and retracted, the head was engaged at the pelvic inlet in the transverse diameter, with occiput to right, the promontory of the sacrum projecting well forwards. The blades were easily applied to the biparietal diameter and the head brought down, rotated and delivered. Moulding and elongation of the head had so diminished the biparietal diameter that very slight compression brought the handles in contact. The woman recovered and was able to be up on the tenth day. The child, which was at term and weighed $6\frac{1}{2}$ pounds, was born dead. The conjugate diameter measured $2\frac{3}{4}$ inches. This case offered a severe test of the value of the forceps in labor obstructed by diminished conjugate, as the deformity was to the limit at which it is possible to deliver a fully developed child without mutilation. Turning was out of the question, Cæsarean section not justified, and

craniotomy the only resort, if forceps failed. The use of the traction rod is designed for application when the head is high. As soon as the part is brought through the inlet the rod can be removed and traction made with the handles. Besides



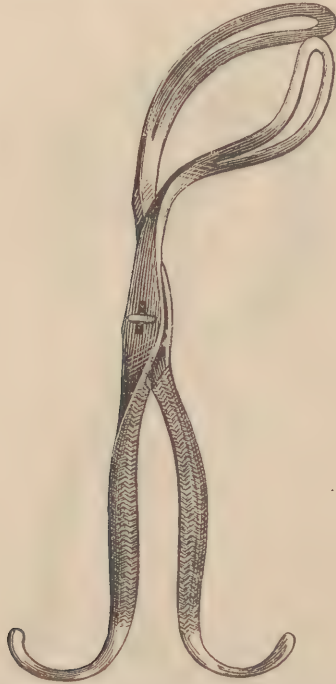
c d, Axis of inlet ; a b, line of traction, parallel to axis of inlet ;
e f, line of traction with blades inserted at sides of pelvis.

simplicity, it offers these advantages over other axis-traction attachments :

Traction made with the rod approximates the blades and increases the security of the grasp of the instrument.

The amount of compression exerted is, to some extent, in proportion to the force required to deliver the head.

The greatest advantage, however, is that the direction of traction can be made more completely



Antero-posterior Forceps of Baumers (after Charpentier).

in the line of the axis of the brim. With the Tarnier principle it is absolutely necessary to apply the blades laterally; consequently traction is made from the sides of the pelvis. With the

antero-posterior forceps the line of traction is downwards and backwards from behind and above the symphysis.

At the time I designed this forceps I thought the idea original, but investigation proved it not so. Baumers,¹⁴ of Lyons, published in 1849 an article describing a pair of forceps with antero-posterior blades constructed on the same principle. The representations of this forceps depict a very crude instrument having an exaggerated pelvic curve. No effort seems to have been made to modify its construction, although Cazeau found it useful in transverse positions of the head. In such cases, he said,¹⁵ he was "convinced that the biparietal application of the blades, which is impossible with the ordinary forceps, is sometimes easy with that of M. Baumers," and he "thought it right to recommend their application."

In conclusion I desire briefly to consider the second proposition advanced:

The obstetrician should not wed any single form or design of instrument, but he should be equally expert with several, and employ one or another, according to the circumstances of the case, always selecting that instrument which best enables him to apply the blades to the sides of the head.

In direct opposition to this is the statement of some obstetric writers that one form of instrument should be made to answer for all cases. For instance Playfair¹⁶ says: "It is a decided advantage for the practitioner to habituate himself to the use of one instrument, with the application and

¹⁴ "Gaz. Med. de Paris," 1849, 3 s. iv, pp. 538—558.

Antero-posterior forceps were also designed by Uytterhoven in 1805. In the discussion of Dr. Sloan's paper Dr. W. L. Reid, of Glasgow, exhibited a pair of antero-posterior forceps which he stated he had used with satisfactory results for seven or eight years.

¹⁵ "System of Midwifery," 3d Am. edit., H. C. Lea, Philadelphia, 1880, p. 468.

¹⁶ *Ibid.*

power of which he becomes thoroughly familiar. It is a mere waste of space and money for him to incumber himself with a number of instruments of various shapes and sizes, and he may be sure that a good pair of long forceps, such as Simpson's, will be suitable for every emergency, *and in any position of the head* (italics my own). Simpson¹⁷ and Leishman¹⁸ give similar advice.

In order to obtain an expression of opinion on the subject from the profession in this country, the following question was embodied in the circular letter sent out:

"Do you habitually employ one variety or make of forceps, or do you make use of several varieties?" The replies were divided in this manner: Thirty employed but one variety of forceps, fifty-three used different varieties, and thirty of the latter recognized the value of axis traction in high operations, and eleven used the short forceps in low operations.

Of the class that use one instrument for all cases the Hodge is the favorite; next in order come the Simpson and Elliot.

Of the fifty-three who use different styles of long double curved forceps the Hodge is still the favorite, the Elliott next, and then the Simpson.

Of the thirty who favor axis traction for high operations this peculiarity is noted: Only two use the Hodge for ordinary cases, while the Simpson and Elliott are very popular.

With the desire to formulate special indications for the use of different forceps, the question was asked those who used a variety of styles, under what conditions they employed one or another instrument. Some were guided by no rule, and replied: "If one won't answer, try another;"

¹⁷ Obstetrical Works, Vol. —, p. 442.

¹⁸ "System of Midwifery," 2d Am. edit. H. C. Lea, Philadelphia, 1875; p. 499.

“use the one that seems to be best suited for the case;” “often change from one kind to another;” and one gentleman uses them “just as he picks them up in his office or residence.”

The indications for axis traction and short forceps are fully recognized by those who employ the classic double curved forceps for ordinary cases. The selection of the variety of the latter instrument is guided chiefly by its compressive power. Those who advocate the application of the blades to the sides of the head select usually the Hodge, Wallace or Davis. The followers of the opposite method employ the Simpson or Elliott. Other indications noted were the use of Taylor's narrow-bladed forceps in the class of cases for which it is designed; straight forceps for rotation of low posterior positions, and forceps with long, straight, or nearly straight, blades for application to the sides of the head when high and transverse. By one correspondent the short forceps is employed when the head is at the outlet, to regulate its movements and save the perineum. Two distinguished operators state they always apply the blades to the biparietal diameter, when possible, and they use the Davis forceps. When, from any cause, the blades cannot be adjusted to the sides of the head, they are applied at the sides of the pelvis; but under these circumstances both of the gentlemen wisely discard the Davis forceps; one substitutes the Simpson, and the other the Simpson or Tarnier. There were numerous exceptions to the above rules; for instance, one gentleman, emphatic in his expression of the value of applying the blades to the sides of the pelvis, uses a strong French forceps, the tips of which meet, and the greatest distance between the blades is $2\frac{1}{4}$ inches.

The comparative compressive power of different

styles of forceps is recognized by a number of operators, who employ one or another under conditions which do or do not require that action. One correspondent states that in ordinary cases, as uterine inertia, he uses the Simpson forceps; in pelvic or cranial disproportion, when some compression is necessary, the Elliot; in greater narrowing, but above the limit where craniotomy is to be considered, the Hodge or Wallace.

Another employs the Simpson forceps in first and second positions of the vertex, the Tarnier in third and fourth, and the short forceps when the head is low.

According to the views here expressed, the only conditions generally recognized for selecting the different varieties of forceps are :

- 1st. The high or low situation of the head, and
- 2d. The compressive power of the instrument.

Accepting the opinion of the majority of replies to the circular letters regarding the advisability of applying the blades to the sides of the head when possible, and recognizing the difficulties in the way of accomplishing it in many cases, a third indication advanced is the oblique and transverse positions of the head, for which, and to overcome the difficulties mentioned, I submit the antero-posterior forceps curved on the flat.

In reply to objections made on the ground that this would unnecessarily complicate the armamentarium of the obstetric operator, I would ask to consider one moment whether it is unnecessary.

Does not the dentist possess a number of forceps, curved on the flat and edge, and in all conceivable angles, and does he not select that instrument which best enables him to seize and extract the tooth? He is guided in the selection of the forceps by the position of the tooth, and

chooses the instrument that is curved in proper manner to grasp it most securely. Is the responsibility of the obstetrician less than that of the dentist? Is it not incumbent upon him to ascertain positively, in every case requiring artificial delivery with forceps, the position of the head and to adjust the forceps in such manner that he can extract it according to the natural mechanism of labor.

With the aid of anæsthesia and the whole hand, if necessary, introduced within the vagina, no excuse exists for failure to clear up any doubt regarding the position.

Let me repeat what is stated in the beginning of this communication: "Labor is absolutely a physical act, accomplished according to a well defined mechanism; therefore, the laws governing the application of artificial aid should be precise and absolute." Only until these laws are established and followed will there exist a uniformity of practice in the use of the forceps.

The advice of eminent obstetricians that one pair of forceps should be made to answer for all operations has had, and still has, its evil influence. In no other operation, and in no other special work, is the operator hampered by such advice.

The surgeon has forceps, scissors, knives and needles curved at different angles on both the flat and edge, and he uses them to the best advantage. Why not tell him to discard all these, as they unnecessarily complicate *his* armamentarium? Tell him that one of each, with a proper curve, will answer for all of his operations, and he should learn to employ it only. I claim it equally unscientific to bind the obstetrician to a single pair of forceps, with which he must accustom himself to do all this class of work; and I repeat,

"he should be equally expert with several, and employ one or another, according to the circumstances of the case, always selecting that instrument which best enables him to apply the blades to the sides of the head."

